DOCUMENT RESUME

ED 040 535 EC 005 824

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TITLE A Behavior Modification Classroom for Head Start Children with Problem Behaviors.
INSTITUTION Washington Univ., Seattle, Child Development and Health Retardation Center.
PUB DATE [69]
NOTE 35p.

EDRS PRICE EDRS Price MF-$0.25 HC-$1.85
DESCRIPTORS *Behavior Change, *Behavior Problems, Case Studies (Education), *Emotionally Disturbed, *Exceptional Child Research, *Preschool Programs, Reinforcement
IDENTIFIERS Head Start

ABSTRACT

A demonstration Head Start class enrolled 12 to 15 children with problem behaviors. The class utilized behavior modification procedures with individualized programing and natural contingencies. Favorable results were noted; three case studies presented concern an aggressively disruptive child, a severely withdrawn child, and a child whose total behavior repertoire consisted of bizarre and maladaptive behaviors which delayed the acquisition of basic motor, social, and verbal skills. (Author/JD)

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FORM 0801

ED040535

A BEHAVIOR MODIFICATION CLASSROOM FOR HEAD START CHILDREN WITH PROBLEM BEHAVIORS[1]

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Abstract

Twelve to fifteen children with problem behaviors are enrolled in a Demonstration Head Start Class. The goals of the demonstration project are: (a) to provide remedial services for these children through the application of behavior modification procedures; (b) to provide Head Start teachers and related personnel with in-service training in behavior modification techniques; (c) to conduct applied research based on the behavioral analyses of teacher-child interactions. Three case studies are presented. The first concerns an aggressively disruptive child; the second, a severely withdrawn child; and the third, a child whose total behavioral repertoire consisted of bizarre and maladaptive behaviors which delayed the acquisition of basic motor, social, and verbal skills.

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A BEHAVIOR MODIFICATION CLASSROOM FOR HEAD START CHILDREN WITH PROBLEM BEHAVIORS[1]

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Head Start programs across the country encompass a diversity of educational models. In a recent presentation, Klein described a number of these: the traditional nursery school approach exemplified by the Bank Street program, the Deutsch-type programs based on sequential programing with heavy emphasis on listening, the autotelic-discovery approach espoused by Nimnicht and the Far West Laboratory, the cognitively oriented programs modeled after Weickart's work at Ypsilanti, the so-called "pressure-cooker" approach of Engelmann and Becker as well as five or six other identifiable models (Klein, 1969). These programs have demonstrated in varying degrees their effectiveness in ameliorating the accumulated deficits of young poverty children.

But what about the children with severe behavior disorders who seem to profit little or not at all from a Head Start program? Although they are relatively few in number, perhaps only one or two in a Head Start class (about the same ratio as in middle-class nursery schools), they do exist, regardless of the educational model upon which the class is based. These children exact a heavy toll of teachers' time and energy, often to the detriment of the other children.

The Demonstration Project

It is imperative that effective programs be created for these children. Such a program is described in this paper. The project, entitled the Demonstration Head Start Classroom (Haring, Hayden, & Nolen, 1969), is jointly sponsored by the Experimental Education Unit (EEU), Child Development and Mental Retardation Center, University of Washington, and the Seattle Public Schools Head Start Program.[2] Three major goals are specified: (a) to furnish remedial services for children with marked behavioral excesses or deficits; (b) to provide a training program for the teachers of these children so that they will be able to deal effectively with problem behaviors; and (c) to conduct research in behavior modification procedures through analyses of teacher-child interactions.

Twelve to fifteen children are enrolled in the class at one time. The enrollment period varies from three weeks to six months, dependent on the severity of the disorder. The children are referred by Head Start teachers in consultation with a Head Start interdisciplinary team. The reasons for referral vary from child to child; severely disruptive, excessively withdrawn, lacking in communication skills, hyperactive, incontinent, schizoid, echolalic, and brain-damaged are some examples of referral labels.

The ideal program for each child study contains four phases:

1. Observation of the child and his teachers and the accumulation of baseline data in the home classroom prior to the child's entry in the Head Start Demonstration Class.

2. Enrollment in the Demonstration Class for a period of time adequate to ameliorate the child's problems. (Data collection is continuous throughout the study.)
3. Involvement of home classroom teachers in an in-service training program to the extent that the Head Start Education Director is able to arrange release time for them.
4. Return of the child to his home classroom with collection of followup data and guidance for the teacher in order to maintain and extend the child's improved behavioral repertoire.

Behavior Modification Procedures

The overall philosophy of the Demonstration Class is based on the application of behavior modification techniques derived from principles of reinforcement. An abundant literature attests to the effectiveness of such procedures in dealing with the aberrant behaviors of preschool children. A few examples include: regressed crawling (Harris, Johnston, Kelley, & Wolf, 1964), hyperactivity (Allen, Henke, Harris, Baer, & Reynolds, 1967), operant crying (Hart, Allen, Buell, Harris, & Wolf, 1964), mutilative self-scratching (Allen & Harris, 1966).

A single unifying theme is apparent in each of these experimental analyses: the common, everyday social behaviors or responses of preschool teachers are powerful determinants of child behavior. Therefore, the child behaviors that teachers respond to will increase while the child behaviors that teachers fail to respond to will decrease. If a teacher

wishes to eliminate the isolate tendencies of an excessively shy child (Allen, Hart, Buell, Harris, & Wolf, 1964), she withholds her smiles, nods, conversation, suggestions, and presentation of materials as long as the child isolates himself from the group. But the moment the isolate child moves toward a peer or a peer group activity, the teacher immediately directs attention to him, reinforcing (providing consequences for) his first approximations to social behavior. By controlling the timing of responses, that is, holding responses contingent on the child's emission of appropriate rather than maladaptive behaviors, preschool teachers have demonstrated that rapid, dramatic, durable, and highly beneficial behavior changes can be effected (Harris, Wolf, & Baer, 1964).

Individualized Programing

In accordance with the principles of systematic application of behavior modification procedures, the Demonstration Class emphasizes an individualized program for each child within the context of a typical preschool program. The daily schedule, though flexible, has a basic structure that enables children to acquire skills in self-management. Such skills are, or should be, one of the major educational goals of a well-designed preschool program. However, the program is also organized to promote each child's acquisition of social, verbal, pre-academic, and motor skills. To this end, a variety of quiet, sedentary activities are balanced by vigorous gross motor activities; child-initiated activities are balanced by teacher-structured and teacher-directed activities. Regardless of the activity in progress, however, the teachers are continually on the alert to reinforce target behaviors peculiar to each child's individual needs.

During outdoor play, for example, where the overall emphasis is on free play and vigorous large motor activities, a dozen different programs may be in effect: for one child, the teachers may be reinforcing appropriate peer contacts; for another, constructive use of materials; for a third child, more creative use of the equipment. Several different verbal development programs may be in progress: reinforcement of one child for more audible verbal output, of another for simply joining two words, of a third for asking instead of grabbing. Span of attention, sharing, concept development, visual and auditory discriminations--all of these skills and many more, a teacher can "teach" (reinforce) in the context of a free play situation if she has carefully specified in advance the target learnings or behaviors for each individual child.

Part of the daily program is devoted to a "formal," pre-academic work time when the children sit at tables in small groups. The tasks consist of activities designed to extend span of attention, increase perceptual-motor skills, refine visual and auditory discrimination skills, develop basic repertoires of size, shape, color, equivalence, seriation and spatial relationships. Again, the program is individualized and is based on the skill levels of each child at the time of his entry into the class. Materials used are those found in every preschool classroom: puzzles, peg boards, matching cards, color cubes, form boards, and a variety of teacher-made materials. The materials are carefully sequenced, however, so that each child acquires specific learnings in gradual increments

(Desper, 1969). Correct responses and error rates over time are recorded by the teacher on each task for each child (Nolen, Huiten, & Kunzelmann, 1968). These data provide the teachers with a basis for preparing individual lesson kits so that maximum success comes to each child as he acquires the basic school performance skills.

Natural Contingencies

The "natural" reinforcers in the environment are also carefully monitored by the teachers. For example, receiving a snack is contingent on each child's completion of his pre-academic tasks. However, for a new child or an excessively active child, material may be so programed that he is required to attend to academic tasks for as little as 3 minutes (30 seconds has been a beginning requirement in some cases.) It depends entirely on "where the child is." The crucial factor is that the teacher defines the first approximation to the target behavior. If the teacher can positively reinforce the child for attending to an academic task for 30 seconds, he is well on his way to eventually extending this attention in gradual increments to 30 minutes.

Another example of the monitoring of the natural reinforcers in the preschool environment is the opportunity to go out of doors. Going outside to play is always contingent on the child's putting away his blocks or housekeeping materials or whatever else he was playing with at the time. Another example: All children participate in music and story sessions because there are no competing reinforcers to lure them away during this time; the use of play materials is restricted and the only adult attention

available is by attending to and participating in the music or story session.

The rest of the activities, such as the indoor free play, use of paint, clay, collage and woodworking materials, dramatic play, discussion and conversation periods that compose the total daily schedule in the Demonstration Class are not detailed here inasmuch as this report is concerned with procedures rather than curriculum. It is important, however, to stress the following points: (a) where teachers have a well-structured program of balanced activities, (b) where target behaviors for each child are clearly specified, and (c) where each teacher knows precisely when and for what she is to attend to a child and when and for what she is to withhold her attention, problem children cease to exist. In the Demonstration Class, with all teacher-time and energy devoted to attending to appropriate behaviors, and none expended on attending to maladaptive responses, 3 adults effectively manage and provide a sound educational program for 12 to 15 children who only a short time before were causes for grave concern in their home classrooms.

To illustrate individual behavior modification programs, three case studies are presented. These children, with divergent problem behaviors, were chosen as a demonstration of the effectiveness of the procedures in treating <u>all</u> kinds of behavioral disorders.

Case Study 1[3]

Townsend was 4-1/2 years old when he was transferred to the Demonstration Class. Beginning at seven months of age he had been in a series of foster homes, each of which had reported great difficulty in managing him. Townsend's teachers described him as excessively disruptive, hyperactive, non-compliant with adults, aggressive toward children. Frequent emission of these maladaptive behaviors in the homeroom were confirmed by the EEU observer. The Head Start bus system for several months had refused to transport Townsend because of his uncontrollable behaviors, and therefore, he was privately transported each day by his social worker in her own car.

Collection of data (according to the system described by Bijou, Peterson, Harris, Allen, & Johnston, 1969) continued after his transfer to the Demonstration Class, where the teachers were instructed during the baseline period to replicate as nearly as possible the homeroom teachers' methods of handling Townsend: rechanneling his disruptive activities, comforting him during catastrophic outbursts, physically restraining him when he attacked other children, verbalizing his feelings. The maladaptive behaviors continued at a high rate during baseline conditions.

Tantrum Behavior

On Townsend's eleventh day in the Demonstration Classroom a first step in behavior modification procedure was initiated. All tantrums, regardless of duration or intensity, were to be ignored; that is, put

on extinction. Absolute disregard of the tantrum, no matter how severe it might become, had to be thoroughly understood by the teachers inasmuch as there are data (Hawkins, Peterson, Schweid, & Bijou, 1966) which indicate that when tantrums are put on extinction, extremes of tantrums may temporarily ensue. Townsend's data were no exception to the classic extinction curve. His first tantrum under the non-attending contingency lasted 27 minutes (average duration of previous tantrums had been five minutes), becoming progressively more severe up to the twenty-minute point. The classroom was cleared of all children and adults when it became obvious that the tantrum was going to be lengthy. The children were taken to the playground by a teacher and a volunteer while the other teacher stationed herself immediately <u>outside</u> the classroom door. When Townsend quieted down, the teacher opened the door to ask in a matter-of-fact voice if he was ready to go to the playground. Before the teacher had a chance to speak, Townsend recommenced his tantrum. The teacher stepped back outside to wait for another period of calm. Twice more Townsend quieted down, only to begin anew at the sight of the teacher. Each time, howver, the episodes were shorter (six, three, and one minutes, respectively). Finally the teacher was able to suggest going out of doors. This she did in a thoroughly neutral fashion with <u>no</u> grimaces or recriminatory comments on the tantrum or the shambles in which she found the room.

On the second day of tantrum intervention there was one tantrum of fifteen minutes with two 2-minute followup tantrums when the teacher attempted to re-enter the room. On the third day there was one mild

four-minute tantrum. No further tantrums occurred in the Demonstration Class nor was there a recurrence when Townsend returned to his regular Head Start class.

Disruptive Behaviors

Modification of behaviors categorized as generally aggressive and disruptive--hitting and kicking children, spitting, running off with other children's toys--was instituted on the 16th session. Disruptive episodes of this type had been averaging 9 per session. On the first day of modification the teachers were instructed to give their undivided attention to the child who had been assaulted while keeping their backs to Townsend. Nine episodes of aggressive behavior were tallied on this day. During the next 11 sessions, there was a marked decrease (an average of 3 per session). During the twelfth session, there was an upswing to 7 episodes with a gradual decrease over the next four sessions until finally no more grossly aggressive or disruptive acts were observed. A zero rate was recorded for the remainder of the sessions.

During this period of withdrawal of adult attention for the two classes of maladaptive behaviors, Townsend began dumping his lunch on the floor and then smearing it around with his feet or hands. The teachers handled the situation the first few days by getting sponges and towels for Townsend and instructing him to clean up the mess. However, a teacher always participated in the cleanup. The food-dumping and smearing continued day after day with the teachers obviously not realizing that their insistence

on the cleanup and their assistance in the task were maintaining the food-dumping at a steady rate of one plate and one glass per day. The teachers were, threfore, instructed to ignore the entire episode and to give their undivided attention to the other children who were attending to the meal. Songs were to be sung if necessary to override peer comments calling attention to Townsend's behavior. On the first session of extinction Townsend himself called attention to the episode repeatedly: "Hey, looka I done," "I make a mess." "Get a sponge, we gotta scrub." The teachers failed to "see" or "hear" any of this. Instead, they sang a bit more lustily, calmly finished lunch with the children, and helped them get ready for outdoors. When Townsend came over to the wrap area, he was matter-of-factly helped with his clothing, with no acknowledgement of his continuing suggestions that "We gotta clean up a big mess." On the following day he again dumped his plate; teachers followed the procedure of the previous day. That session marked the end of the food-dumping except for one isolated episode 2-1/2 months later, which the teachers again ignored.

Bus Program

Another behavior modification project with Townsend involved the use of consumable reinforcers. As mentioned earlier, Townsend had been banned from the Head Start bus. The children were required by the bus system to stay in their seats and keep their seat belts fastened. Staying buckled in a seat belt was a behavior incompatible with the disruptive

behaviors that had caused Townsend to be banned: attempting to open the doors while the bus was in motion, playing with the instrument panel, and throwing himself upon the bus driver while the latter was driving. Therefore, staying buckled in the seat belt was the target behavior in the following program aimed at reinstating Townsend as an acceptable bus rider.

Day 1. Townsend was prepared in advance for the bus trip. The teacher explained to him that he would be expected to sit quietly and keep his seat belt buckled. "I don't keep no seat belt on me," Townsend replied. The teacher ignored the remark. When the bus arrived, the teacher got on the bus with Townsend. The bus driver snapped Townsend's seat belt in place and the teacher immediately put a peanut in Townsend's mouth commenting, "Good, you are sitting quietly, all buckled up snug in your seat belt." She then quickly dispensed peanuts to every child on the bus with approving comments about their good bus-riding habits. Continuous rounds of peanut-dispensing and approving comments were continued throughout the 15-minute bus ride.

Day 2. The same procedure as on Session 1 except that one peanut was dispensed to each child at longer intervals--2 to 3 minutes.

Days 3, 4, 5. Peanuts--several at a time--were given only three times at variable intervals. Townsend's social worker alternated with the teacher in riding the bus and dispensing the consumables.

Days 6, 7, 8. One or the other of the adults continued to ride the bus but told the children that the peanuts would be saved until they got off the bus.

Day 9. With the exception of the bus driver, no other adult rode the bus. Both the teacher and the social worker were stationed at Townsend's bus stop. The driver had been cued to praise the children for their good bus-riding behavior as he let them off the bus. In Townsend's case he was to say nothing if Townsend had not stayed buckled. When the teacher and social worker heard the bus driver praise Townsend, they voiced approval, too, and gave him a small sucker as they accompanied him to his house.

Day 10. The same as Day 9 except that this day only the teacher met Townsend at his bus stop.

Day 11. Only the social worker met Townsend. Instead of a consumable reinforcer she presented him with a small toy.

Days 12 and 13. The social worker met Townsend but gave only social reinforcement for his good bus-riding behaviors.

Days 14, 15, and 16. No one met Townsend, but the bus driver was reminded to give him praise and a hug as he lifted him off the bus.

From then on Townsend was on his own, although the social worker occasionally met the bus if she were doing a routine call on the family. If she had brought clothing or play materials for Townsend, she presented these to him as she took him off the bus. The teachers also continued to intermittently praise his independent bus-riding.

Shaping Play Skills

Establishing appropriate behaviors incompatible with his maladaptive behaviors was the area to which teachers gave the greatest time, energy,

and planning in Townsend's program. Data from the home classroom indicated that he had few play skills. Out of doors he was unsuccessful at tricycle riding, climbing, jumping, and ball-throwing activities. Frequently the unsuccessful attempt precipitated a tantrum. Indoors, the only sustained play activity in which he engaged was isolate play in the housekeeping corner. Investigation of the data revealed that he did not build with blocks, paint, do woodworking, use puzzles or other manipulative toys except to dump them out, scatter them about, or grab them away from other children. Also, he had an exceedingly low rate of interaction with other children. They avoided him, apparently, because of his deficient play skills and his high rate of noxious behaviors.

It seemed futile to attempt to build cooperative play with children until Townsend had acquired some play skills. Therefore, the teachers began a step-by-step program of teaching play with each of the materials considered important in a regular preschool program. For example, a teacher helped Townsend to duplicate what at first were exceedingly simple block models. If he refused to participate in a play "lesson" he simply forfeited the attention of all adults in the classroom. The moment he returned to the play materials, the attention of the teacher was again immediately forthcoming. In order to avoid Townsend's acquiring only stereotyped play patterns, he was also reinforced for all divergent or unique uses of materials and equipment as long as the divergence was within the broad limits acceptable to preschool teachers. Throwing blocks, while surely a divergent use, was considered inappropriate. This

program of shaping play skills was concurrent with the extinction of maladaptive behaviors previously described. Therefore, even though the consequence of any one of Townsend's maladaptive behaviors was immediate withdrawal of adult social reinforcement, social reinforcement was readily and unstintingly available to him for any approximation to appropriate behavior.

Between Sessions 6 and 26 Townsend acquired an excellent repertoire of play skills with a variety of materials and equipment. It was decided, therefore, to change reinforcement contingencies: adult social reinforcement would be available only when Townsend engaged in constructive use of play materials and interacted appropriately with another child. The change in contingencies appeared to have a positive effect. Between sessions 26 and 32 (Figure 1) there was a steady increase in the rate of cooperative play.

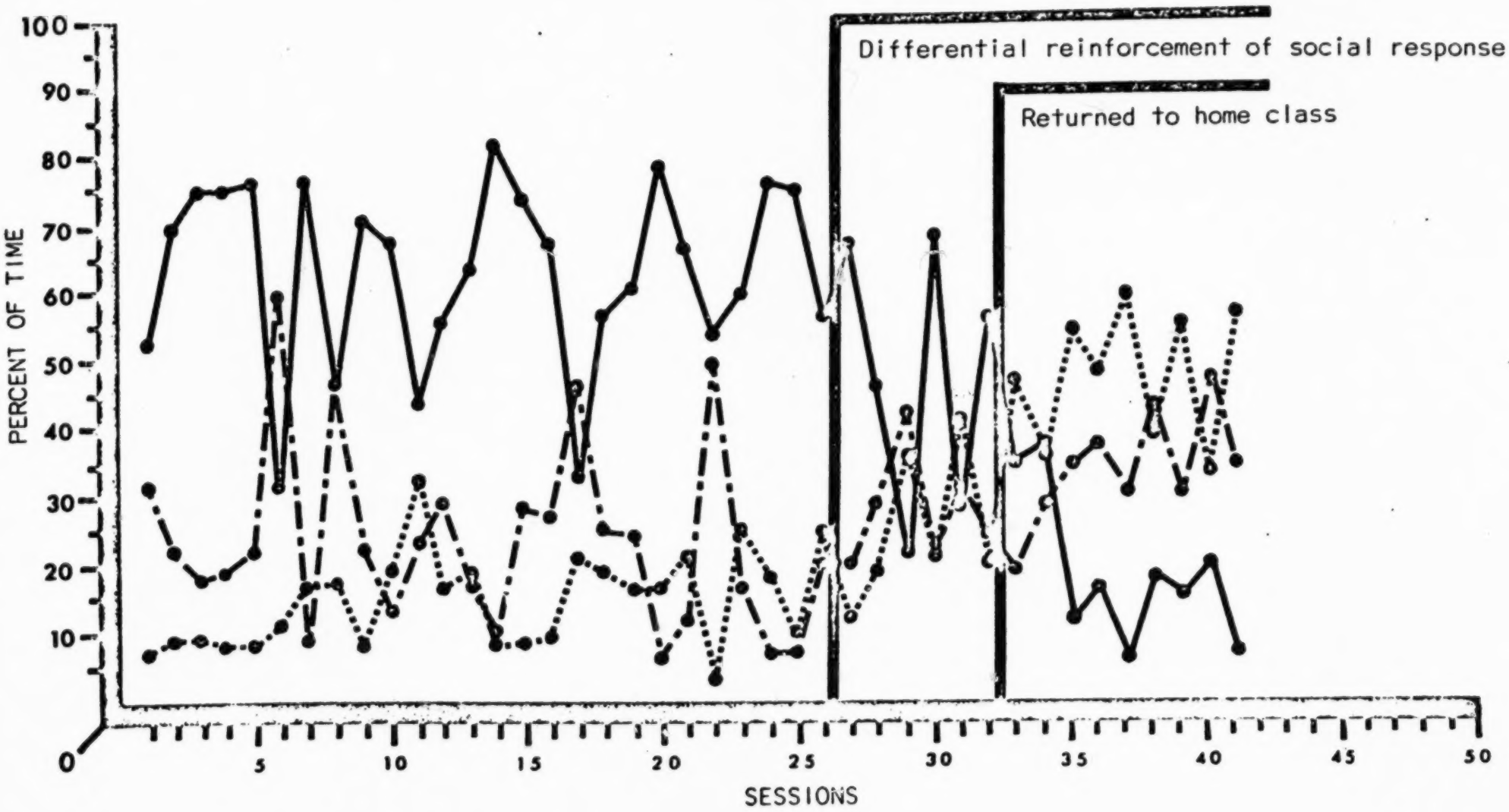
Return to Home Classroom

Analysis of the data at this point indicated that it was an appropriate time to return Townsend to his home classroom. Townsend's original teachers had visited the Demonstration Classroom and had also been informed on each phase of the modification program. A joint staff meeting was held several days prior to the transfer in which all the guidance procedures and supportive data were reviewed. A member of the EEU research team was assigned to Townsend's home classroom to continue the data collection and to provide

FIGURE 1

Case Study 1 - Townsend

Social Behavior With Peers



necessary coaching of the teachers in maintaining the reinforcement contingencies. Coaching was supplied on Sessions 33 to 36 (Figure 1) at which point the data indicated that Townsend's teachers were able to carry forward on their own. Not only were there no incidents of disruptive behaviors, but Townsend's social skills continued to hold at a high stable rate as measured by the amount of cooperative play (Figure 1, Sessions 37-41). Several postchecks were made throughout the remainder of the school year. Townsend continued to be a "normal" outgoing little boy, working and playing happily with an assortment of play materials and with a variety of children while requiring no more than an average share of the teacher's attention.

Case Study 2

Eleanor was 4 years 10 months of age at the time of her transfer to the Demonstration Class. Referral information described her as extremely withdrawn, non-verbal, incapable of learning. During the initial observation by an EEU staff person she did not smile, laugh, cry, or look directly at another person. She sat or crouched for long periods, aimlessly fingering small objects. The observer heard her speak only three times, each characterized by almost inaudible monosyllables.

The observer was particularly struck by the general tenor of this particular classroom: strict, authoritative control; few free-play activities; frequent reprimands to children who spoke out-of-turn or moved about the room without explicit permission. On the first day of observation

in the home classroom, the observer tallied 27 teacher-initiated contacts, all of them reprimands or command-type instructions. On the second observation day there were 21 teacher-initiated contacts, again all commands or reprimands.

When Eleanor entered the Demonstration Class, the teachers were given no special instructions except to establish rapport with her as rapidly as possible. On the first session she said almost nothing (Figure 2) and interacted with children only 3% of the time (Figure 3). On the second session she verbalized 25% of the morning (Figure 2) mostly in response to the teachers' non-command-type comments and interacted with children 18% of the morning (Figure 3). It was apparent that Eleanor could talk and could play with children at least at a low rate in an environment where these responses were sanctioned. It also soon became obvious that Eleanor was not incapable of learning, as had been reported. With a carefully arranged sequence of pre-academic tasks, Eleanor progressed in all areas of intellectual development. The decision was made that no specific modification projects would be initiated; thus the effectiveness of a stimulus-rich preschool environment in which appropriate spontaneity by all children was reinforced by the teachers could be tested. For the first 20 sessions of her enrollment Eleanor's verbal output averaged 23.5% each school session (Figure 2). Her social interaction with children averaged 22% of each session (Figure 3).

FIGURE 2

Case Study 2 - Eleanor

Verbal Behavior

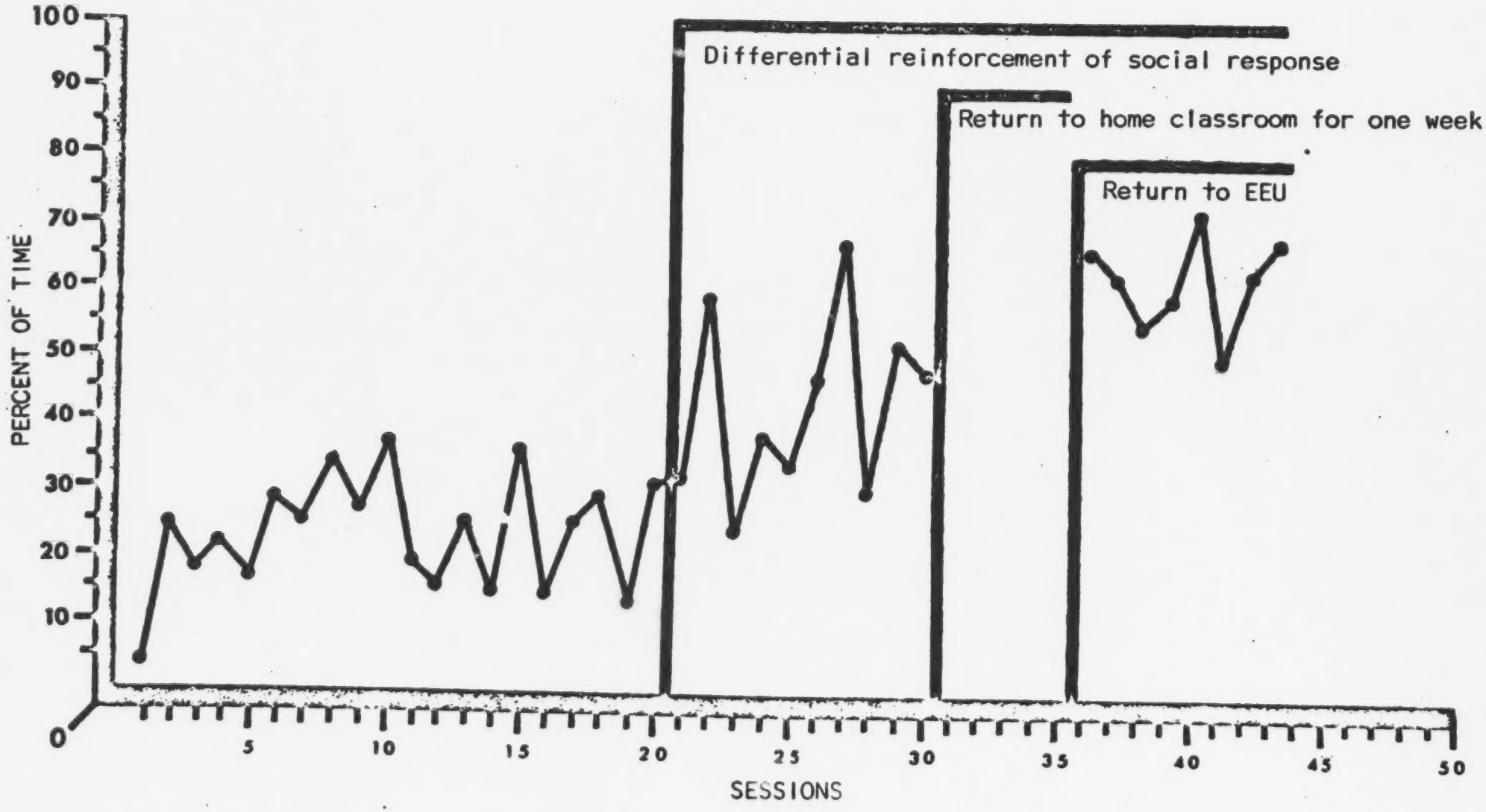
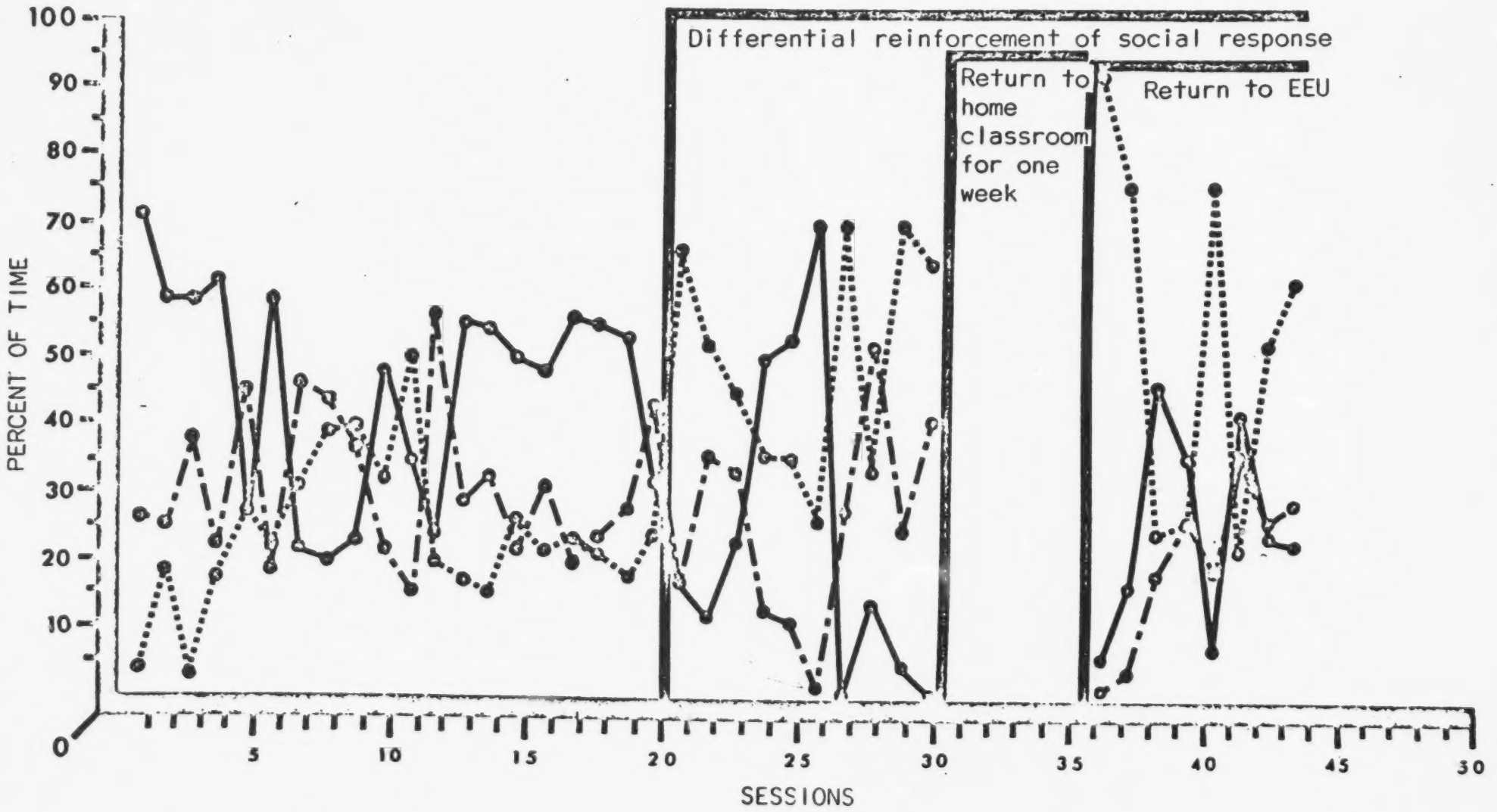


FIGURE 3

Case Study 2 - Eleanor

Social Behavior With Peers



Differential Reinforcement of Social Responses

Though these rates were an improvement over the home classroom performances, Eleanor was still less verbal and more isolate than many of her peers. Therefore, a modification program was initiated on Session 21. The contingencies were:

1. No adult reinforcement would be available to Eleanor when she was playing alone.
2. She would receive adult reinforcement when she was interacting with children, with or without verbal accompaniment.
3. She would receive additional adult attention when she was verbalizing with children.

Under these contingencies there was almost immediate improvement in Eleanor's verbal output (Figure 2) as well as in her interaction with peers (Figure 3). When the data indicated that the desired verbal and social skills were well-established, plans were made to return Eleanor to her home classroom. The home room teachers did not participate in the instructional sessions offered by the EEU but expressed eagerness, nevertheless, to have Eleanor back.

Return to the Home Classroom

Eleanor returned to the home classroom after the 30th session at EEU. The observer reported that Eleanor came in smiling and talking animatedly. She was sharply reprimanded for talking and told to sit down. She worked a puzzle, got up to exchange it for another one and was again sharply

reprimanded, this time for getting out of her seat. During the first half hour she received nine reprimands for behaviors which are generally considered appropriate for four-year-olds in a preschool situation. By the middle of the first day Eleanor had reverted to her earlier patterns of sitting mute and unreponsive during the school session. Efforts to train the teacher in modifying her own behaviors in relation to the child were unsuccessful. The following week Eleanor was returned to the Demonstration Class where immediate recovery of both verbal and social responses occurred (Figures 2 and 3).

Eleanor's case is a classic example of the reinforcement paradigm. Many clinicians engaged in rehabilitative therapy have had a similar experience with improved or rehabilitated patients or clients, whether juvenile delinquents, psychotics, or alcoholics. The old environment fails to provide reinforcers for the new, more appropriate responses; often these new responses, considered inappropriate in the original milieu, are punished, as when members of the gang threaten to ostracize the returnee if he refuses to participate in a car theft; or a parent refuses to tolerate in his offspring the behaviors that the therapist promoted as conducive to good mental health.

Case Study 3

Doreen was 4 years 9 months when she entered the Demonstration Class. The reasons for referral were many: immaturity, incessant crying, frequent physical attacks on other children, excessive dependency on adults, severe

deficits in large motor skills, speech that was either echolalic or unintelligible mumbling to herself, little interaction with peers. Data taken for 6 sessions in the home classroom prior to her transfer to the Demonstration Class confirmed referral reports.

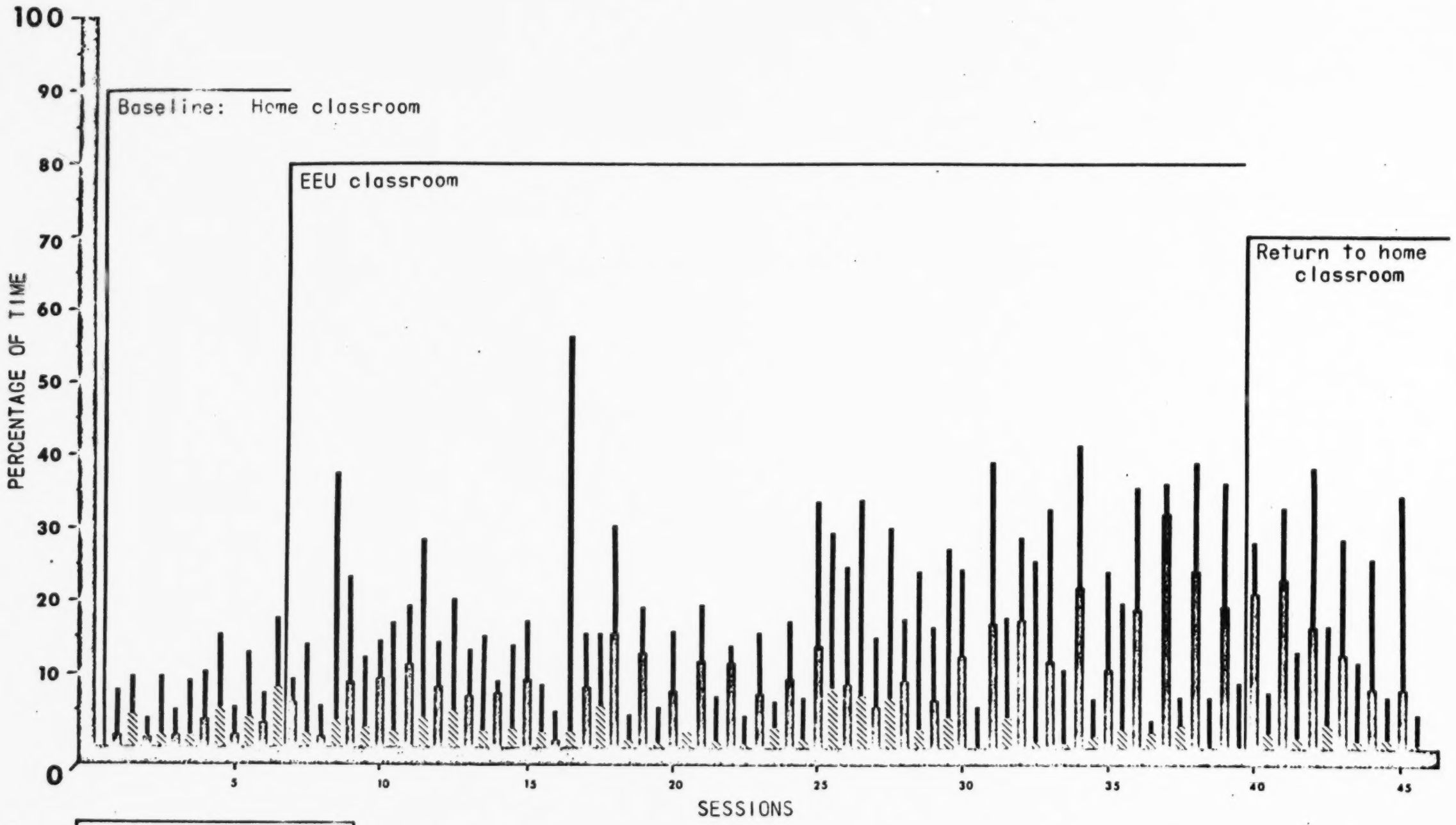
Shaping Motor Skills

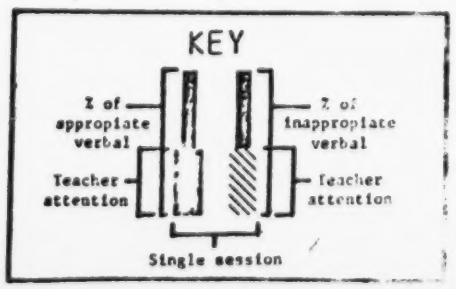
Where does one begin with a child displaying so maladaptive and deficient a repertoire? As with Townsend it was reasoned that a child needs play skills to participate even minimally in the preschool program. However, in Doreen's case, basic motor skills had to be developed first. Therefore, a program was planned beginning with very simple skills such as walking a low, wide board and progressing to more complex activities like climbing on the outdoor equipment, riding the wheel toys, and pumping on the swings. A teacher's hand and other forms of physical contact were forthcoming only when Doreen was making an effort to engage in a motor task. At all other times the teachers disengaged her hands and turned away when she clung to them or to their clothing. Within 5 weeks Doreen was using all the outdoor equipment competently and independently. One data photography sequence shows her going up and over a six-foot climber without assistance. Concurrently, the teachers totally ignored her attacks on children. They did, however, give their attention to the child who had been attacked, inserting themselves between Doreen and the other child, with their backs to Doreen. Attacks on children became infrequent, only one or two per week.

Differential Reinforcement of Verbal Behavior

Doreen's verbal behavior continued to be of a low order. The verbal data were broken down into two categories: (a) appropriate verbalizations as specifically defined, e.g., intelligible words relevant to the situation and (b) inappropriate verbalizations or vocalizations as specifically defined. The latter included her whimpering cries, echolalic or parroted responses, and the unintelligible monologues that she carried on with herself. The baseline data taken in the home classroom indicated that she engaged in more inappropriate than appropriate verbal behavior and that the teachers tended to respond more to the inappropriate than they did to the appropriate (Figure 4, Sessions 1 through 6). When Doreen entered the Demonstration Class, the teachers were instructed to attend as frequently as possible to her appropriate verbalizations and to attend as infrequently as possible to her inappropriate ones. As can be seen in Figure 4, the teachers (themselves in training in behavior modification procedures) rarely succeeded in totally ignoring the inappropriate verbalizations. Nevertheless, they did, for the most part, give a proportionately greater share of their attention to the appropriate. Under this regimen, appropriate verbalizations began an irregular increase with inappropriate verbalizations slowly declining, again at an irregular rate; the latter eventually constituted a relatively small percentage of the child's total verbal output (Figure 4, Sessions 34 to 39). Six days of data taken after Doreen's return to the home classroom indicated that appropriate verbalizations

FIGURE 4
Case Study 3 - Doreen
Proportion of appropriate to inappropriate verbal behavior; ratio of adult social reinforcement for each category





continued to dominate her verbal output and, further, that her teachers were responding in an appropriately differential fashion.

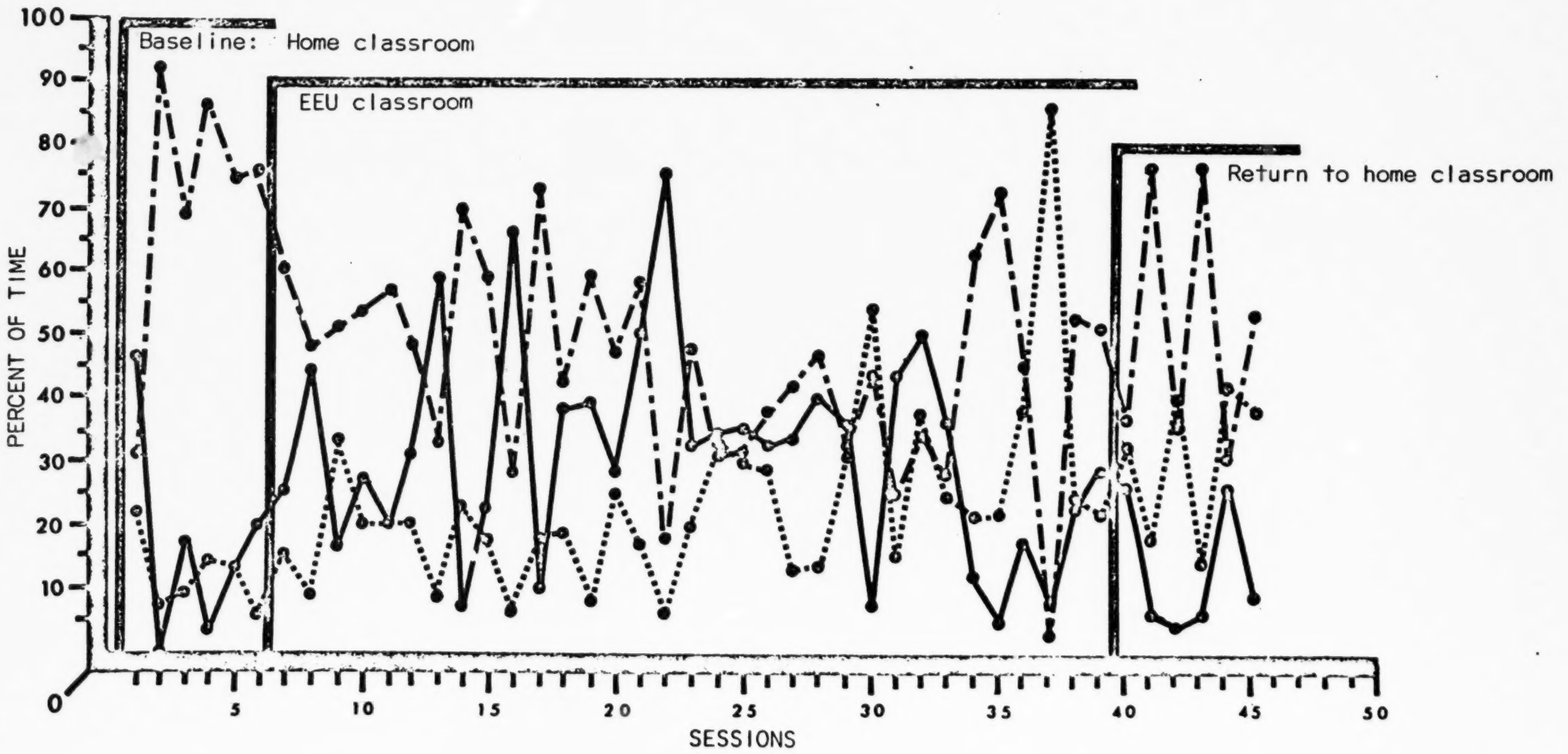
A program designed to reduce Doreen's echolalic responses was also undertaken during this same period. Two adults took part in this part of the program, one to ask questions or to direct comments to Doreen, the other to supply her with appropriate verbal responses. For example, one teacher might ask, "What are you doing, Doreen?" Doreen usually responded, "What are you doing, Doreen?" Under the new program, however, the second adult prompted her to an appropriate answer before she could echo the first teacher's question or comment. Gradually, the prompted responses were faded out as Doreen emitted fewer parroted responses and a greater number of spontaneously appropriate responses.

No specific program to increase Doreen's social interaction with peers was instituted though the question was posed: Will amelioration of the major behavior disorders be accompanied by improved social interaction with peers? The data indicate that cooperative interaction with peers did increase from an average of 10% of each session during baseline in the home classroom to an average of 26% (Figure 5) in the Demonstration Class. It seems probable that as (a) assault behaviors decreased, (b) verbalizations became less bizarre, and (c) improved motor skills enabled her to use the play equipment, Doreen became a more desirable play companion, thus making peer as well as adult social reinforcement available to her.

FIGURE 5

Case Study 3 - Doreen

Social Behavior With Peers



Conclusions

These behavior modification projects have been described in detail in order to illustrate the application of reinforcement principles by preschool teachers in a field setting. The principles and techniques as they relate to these specific case studies follow:

1. Preschool teachers can readily employ reinforcement procedures to effect desired changes in children's behavior. To do so effectively, however, a teacher must:
   a. assess children objectively (rather than subjectively or inferentially) so that specific behaviors can be selected as acceleration or deceleration targets;
   b. keep continuous records on these target behaviors; and
   c. analyze the records and use them as a basis for program planning and continuous assessment of the effectiveness of the program.
2. The most severe maladaptive behaviors are responsive to their immediate consequences. For example, Townsend's tantrums were eliminated when they were systematically ignored.
3. Every adult involved in a child's environment is potentially a powerful social reinforcer. Thus, every adult who interacts with children in the preschool situation must carefully monitor his responses to each child. When strict monitoring is not exercised, progress will be slower and more irregular as illustrated in the case of Doreen's verbal behavior.

4. Modification of only one or two of a child's behaviors at a time is essential to a successful modification program. A teacher's responses may become scattered and unsystematic if too many contingencies must be kept in mind for each child.
5. Because involved adults do have powerful reinforcing properties, consumable reinforcers need be used only sparingly to shape appropriate behaviors in most preschool children.
6. The regular preschool environment abounds in natural reinforcers--play materials, snack time, outdoor play, special games and activities. Preschool teachers must make these reinforcers work <u>for</u> the child by making them available contingent on responses that will enhance the child's progress.
7. Physical or verbal punishment rarely need to be employed even when behaviors are as maladaptive as Townsend's food-smearing. (However, withdrawal of adult social reinforcement for an inappropriate response can be considered a form of mild punishment.)
8. Reinforcement of successive approximations to the target behaviors (shaping) is essential to achieve successful behavior modification. Reinstatement of Townsend as a bus rider is one example of shaping procedures.
9. A careful step-by-step reduction in the amount of reinforcement (leaning the schedule) is necessary if a response is to be self-maintained. The bus-riding sequence is again cited as an example.
10. Though the extinction process (withholding reinforcement) is a highly effective means of freeing a child of his maladaptive response it does not automatically provide an alternate set of

appropriate behaviors. Therefore, it is critical that teachers give their attention to desired behaviors (or approximations thereof) so that the child may acquire a functional response repertoire.

11. Behavioral disorders in young children are primarily a function of the social environment rather than of some mysterious malaise within the child. Thus, gains in developing a repertoire of adaptive responses will be maintained only to the extent that subsequent environments reinforce appropriate rather than inappropriate response.

12. Elimination of maladaptive behaviors with simultaneous shaping of appropriate behaviors often correlate with other favorable changes in the child's behavioral repertoire. The concurrent changes in improved cooperative play patterns in the third case study demonstrate this effect, an effect which has been noted previously (Allen, Henke, Harris, Baer, & Reynolds, 1967).

It would appear from this demonstration project, as well as from many other experimental analyses of behavior, that the teacher's differentiated responsiveness is the crucial variable in determining what and how the young child learns. No educational model, no preschool curriculum alone can insure optimum progress for a child. The deciding factor is the teacher's behavior. When teachers implement the program so that each child receives adult attention only when his responses are appropriate, a success factor is built in that more nearly ensures optimum learning for every child regardless of his social background or his behavioral repertoire.

Footnotes

1. This project is a part of the Model Preschool Planning Project, Handicapped Children: Early Education Assistance Act; also, it is partially funded through the King County Mental Health-Mental Retardation Board.

2. Francis I. Jones is director and Margaret G. Bland is educational director of Seattle Public Schools Head Start.

3. Data photography was used extensively in this case study. A 16mm color film, Building Social Skills in the Preschool Child (Haring, Hayden, & Allen, 1968) is available.

References

Allen, K. E., Hart, B. M., Buell, J. S., Harris, F. R., & Wolf, M. M. Effects of social reinforcement on the isolate behavior of a nursery school child. Child Development, 1964, 35, 511-518.

Allen, K. E., & Harris, F. R. Elimination of a child's excessive scratching by training the mother in reinforcement procedures. Behaviour Research and Therapy, 1966, 1, 305-312.

Allen, K. E., Henke, L. B., Harris, F. R., Baer, D. M., & Reynolds, N. F. The control of hyperactivity by social reinforcement of attending behavior in a preschool child. Journal of Educational Psychology, 1967, 58, 231-237.

Bijou, S. W., Peterson, R. F., Harris, F. R., Allen, K. E., & Johnston, M. S. Methodology for experimental studies of young children in natural settings. Psychological Record, 1969, 19, 177-210.

Desper, G. J. Curriculum materials, Part 3: The preschool child, 16mm film, Experimental Education Unit, Child Development and Mental Retardation Center, University of Washington, 1969.

Haring, N. G., Hayden, A. H., & Nolen, P. A. Accelerating appropriate behaviors of children in a Head Start program. Exceptional Children, 1969, 35, 773-784.

Haring, N. G., Hayden, A. H., & Allen, K. E. Building social skills in the preschool child, 16mm color film, Experimental Education Unit, Child Development and Mental Retardation Center, University of Washington, 1969.

Harris, F. R., Johnston, M. K., Kelley, C. S., & Wolf, M. M. Effects of positive social reinforcement on regressed crawling in a preschool child. Journal of Educational Psychology, 1964, 55, 35-41.

Harris, F. R., Wolf, M. M., & Baer, D. M. Effects of adult social reinforcement on child behavior. Young Children, 1964, 1, 8-17.

Hart, B. M., Allen, K. E., Buell, J. S., Harris, F. R., & Wolf, M. M. Effects of social reinforcement on operant crying. Journal of Experimental Child Psychology, 1964, 1, 145-153.

Hawkins, R. P., Peterson, R. F., Schweid, E., & Bijou, S. W. Behavior therapy in the home: Amelioration of problem parent-child relationships with the parent in a therapeutic role. Journal of Experimental Child Psychology, 1966, 4, 99-107.

Klein, J. W. Innovative approaches in project Head Start. Paper presented at the Council for Exceptional Children, Special Conference on Early Childhood Education, New Orleans, December, 1969.

Nolen, P. A., Hulten, W. J., & Kunzelmann, H. P. Data diagnosis and programming. In John I. Arena (ed.) Successful programing: Many points of view. Boston: Fifth Annual International Conference of the Association for Children with Learning Disabilities, 1968, 409-418.